



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) Publication number : **0 578 603 A1**

(12)

## EUROPEAN PATENT APPLICATION

(21) Application number : **93610034.6**

(51) Int. Cl.<sup>5</sup> : **B29B 17/00, B29C 47/10,  
B29B 9/06**

(22) Date of filing : **03.06.93**

(30) Priority : **11.06.92 DK 766/92**

(43) Date of publication of application :  
**12.01.94 Bulletin 94/02**

(84) Designated Contracting States :  
**AT BE CH DE ES FR GB IE IT LI NL PT SE**

(71) Applicant : **Wuorela, Raimo**  
**Karabodavägen 100**  
**S-290 60 Kyrkhult (SE)**

(72) Inventor : **Wuorela, Raimo**  
**Karabodavägen 100**  
**S-290 60 Kyrkhult (SE)**

(74) Representative : **Noergaard, Ulrik et al**  
**c/o Chas. Hude H.C. Andersens Boulevard 33**  
**DK-1553 Copenhagen V (DK)**

(54) An apparatus for producing a granulated material from used thermoplastic material.

(57) An apparatus for producing a granulated material from used thermoplastic material, such as plastics foil, and an aqueous filler material, such as sawdust. The apparatus comprises a cutting unit (1) provided with knives (9, 30) for the thermoplastics, a worm extruder unit (2) for plastifying the thermoplastic material and communicating with the cutting unit (1), as well as a granulating unit (3). The rotating knives (9) of the cutting unit (1) are arranged on a cylinder unit (8) mounted in an elongated chamber (7). The fastening spots of the knives (9) are preferably placed on at least one helical line on the surface of the cylinder unit (8). The cutting unit (1) is mounted parallel to and opposite the worm extruder unit (2) in such a manner that said worm extruder unit can emit heat to said cutting unit. The cutting unit (1) comprises at least two temperature and/or moisture sensors (15a-15g) inside the chamber (7) and in addition heat-regulating means controlled by said temperature and/or moisture sensors (15a-15g) so as to ensure a regular evaporation of the water in the filler material which is thereby dry when passing from the cutting unit (1) into the worm extruder unit (2). The worm extruder unit is provided with at least two thermostatically controlled (19a, 19b, 19c) auxiliary heat tapes (18a, 18b, 18c). In this manner a very reliable production of the granulated material is achieved without risking vapour explosions inside the worm extruder unit.

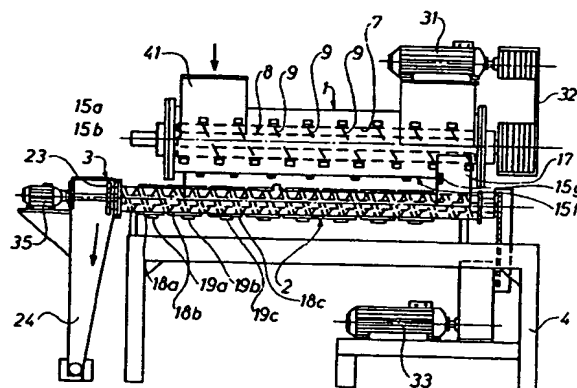
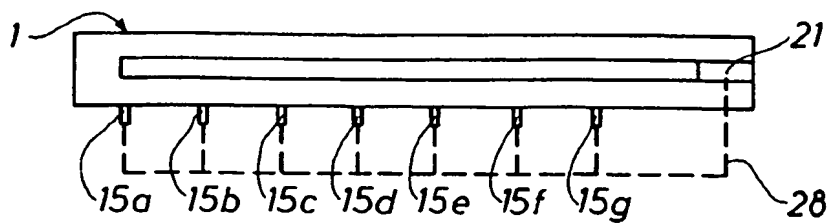
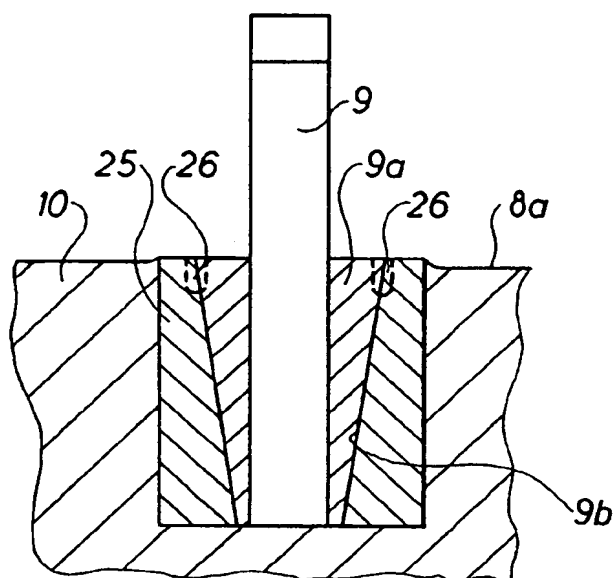


Fig. 1

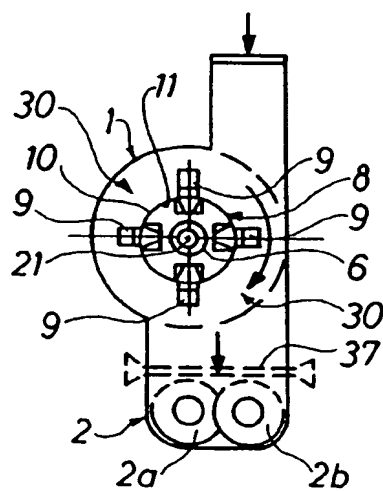
EP 0 578 603 A1



**Fig. 3**



**Fig. 4**



*Fig. 5*

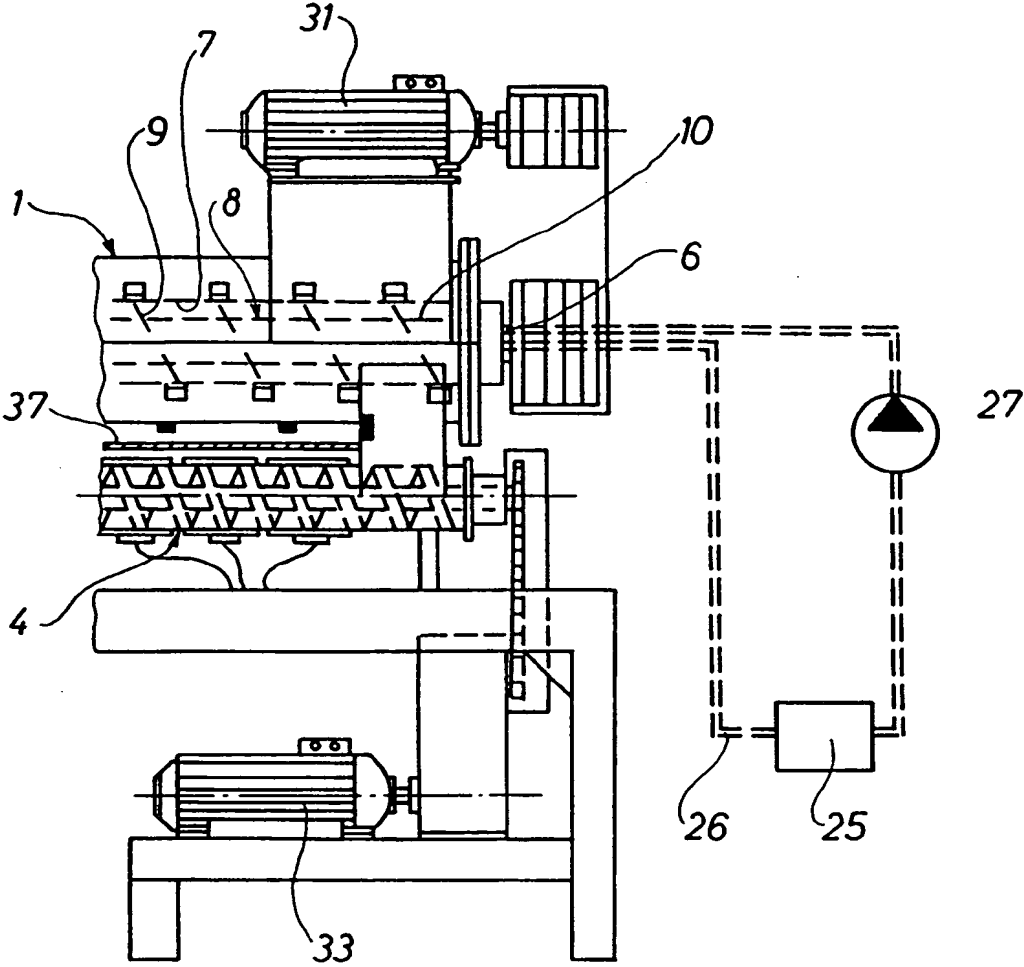


Fig. 6



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number

EP 93 61 0034

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0 140 846 (FORNASERO) * page 15, paragraph 2; figures *	1	B29B17/00 B29C47/10 B29B9/06
A	US-A-4 968 463 (LEVASSEUR) ---	1	
A	FR-A-2 575 943 (JGC CORPORATION ET AL) * figures *	1	
A	GB-A-2 083 663 (VERTEC IND LTD) -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B29B B29C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 SEPTEMBER 1993	Examiner PIPPING L.E.L.
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : oral-written disclosure  P : intermediate document</p> <p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons  * : member of the same patent family, corresponding document</p>			

EPO FORM 1503 (01.92) (P0601)